

### Claims

[Claim 1]

An electrical characteristics measurement method, wherein a probe comprising a single signal terminal, at least one  
5 ground terminal, and a variable impedance element disposed in the vicinity of a terminal selected from said signal terminal and said ground terminal is used to measure the electrical characteristics of a measurement object, said method comprising the steps of:

10        setting the impedance of said variable impedance element substantially to 0, disconnecting the signal terminal and ground terminal of the probe at the distal end of said probe, forming a short circuit, and connecting a load to perform calibrations; and

15        making the impedance of said variable impedance element to be greater than a prescribed value, and placing said signal terminal and said ground terminal in contact with said measurement object to measure the electrical characteristics thereof.

20 [Claim 2]

The electrical characteristics measurement method according to claim 1, wherein said measuring said electrical characteristics comprising the steps of:

25        setting a parameter for evaluating the measurement error of the electrical characteristics of said measurement object, the parameter being set so that the measurement error becomes smaller as the value of the parameter decreases; and

          increasing the impedance of said variable impedance

element until said parameter becomes equal to or less than an allowable value set in advance.

[Claim 3]

The electrical characteristics measurement method  
5 according to claim 1 or 2, wherein said calibration comprises the steps of:

disconnecting and calibrating said signal terminal and said ground terminal in a location separated from peripheral objects;

10 electrically conducting said signal terminal and said ground terminal to a single conductor to perform a short-circuit calibration; and

electrically connecting said signal terminal and said ground terminal to a terminal of a 50- $\Omega$  resistor to perform a  
15 loaded calibration.

[Claim 4]

An electrical characteristics measurement device for measuring the electrical characteristics of a measurement object, comprising:

20 a measuring instrument, and

a probe that is connected to said measuring instrument and has a single signal terminal and at least one ground terminal, wherein said measurement device has

a variable impedance element is disposed in the vicinity  
25 of one terminal selected from said signal terminal and said ground terminal of said probe.

[Claim 5]

The electrical characteristics measurement device

according to claim 4, wherein the distance between said variable impedance element and the distal end of said signal terminal or said ground terminal as one of the terminals provided with said variable impedance element is  $1/10$  or less the measuring wavelength when the electrical characteristics of said measurement object are measured.

[Claim 6]

The electrical characteristics measurement device according to claim 4 or 5, further comprising:

10        an input unit for inputting the allowable value of a parameter for evaluating the measurement error of the electrical characteristics of the measurement object;

          a storage and computation unit for storing the impedance of said variable impedance element, the measurement values

15        obtained from said probe, and the relational characteristics thereof, calculating a parameter for evaluating the measurement error from the relational characteristics, and comparing said parameter and said allowable value; and

          an output unit for outputting the results of said storage

20        and computation unit.